

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A pixel processing apparatus, comprising:
 - a frame storage unit in which input pixel data is stored in frame/field units;
 - a line storage unit in which the input pixel data, which is stored in the frame storage unit in frame/field units, is stored in line units per vertically-divided segment;
 - a processor that pre-processes or post-processes the input pixel data stored in the line storage unit; and
 - a controller that divides the input pixel data within a frame, which is stored in the frame storage unit, into a plurality of segments in a vertical direction, and sequentially stores the input pixel data in the line storage unit in a sequence of segments in line units.
2. (original): The apparatus of claim 1, wherein a size of the line storage unit is determined by dividing a line length of a frame by K, wherein K is an integer greater than 1.
3. (original): The apparatus of claim 1, wherein the controller sequentially stores input pixel data in a segment among the plurality of segments in the line storage unit in line units, sequentially stores input pixel data in a next segment in the line storage unit in line units, and repeats storing of pixel data in other segments until reaching a segment of a predetermined number.

4. (currently amended): A pixel processing method comprising:

dividing pixel data within a frame into a plurality of segments in a vertical direction;

sequentially pre-processing or post-processing the pixel data in a segment among the plurality of segments in line units and then, sequentially pre-processing or post-processing the pixel data in a next segment in line units; and

repeating pre-processing or post-processing on the pixel data in other segments in line units until reaching a segment of a predetermined number,

wherein the sequentially pre-processing or post-processing the pixel data in the segment comprises storing the pre-processed or the post-processed pixel data and checking whether or not pre-processing or post-processing is performed on pixel data at a last row of the segment.

5. (original): The method of claim 4, wherein each of the plurality of segments within the frame overlaps another of the plurality of segments by a predetermined number of pixels.

6. (original): A method of processing pixels in a frame that is divided into a plurality of segments, the method comprising:

storing pixel data at a first line of a k^{th} segment in line units;

pre-processing or post-processing the pixel data after storing the pixel data in a predetermined number of line units and outputting corresponding pre-processed or post-processed pixel data;

separately storing the pre-processed or post-processed pixel data and then, checking whether pre-processing/post-processing is performed on the pixel data at a last row of the k^{th} segment or not;

checking whether the k^{th} segment is a segment of a predetermined number after the pre-processing/post-processing on the pixel data at the last row; and

completing segment-based pixel processing when the k^{th} segment is the segment of the predetermined number, and repeating the pixel processing until reaching the segment of the predetermined number when the k^{th} segment is not the segment of the predetermined number.

7. (currently amended): A computer-readable recording medium for recording a computer program code for enabling a computer to provide a service of processing pixels, the service comprising the steps of:

dividing pixel data within a frame into a plurality of segments in a vertical direction;

sequentially pre-processing or post-processing the pixel data in a segment among the plurality of segments in line units and then, sequentially pre-processing or post-processing the pixel data in a next segment in line units; and

repeating pre-processing or post-processing on the pixel data in other segments in line units until reaching a segment of a predetermined number,

wherein the sequentially pre-processing or post-processing the pixel data in the segment comprises storing the pre-processed or the post-processed pixel data and checking whether or not pre-processing or post-processing is performed on pixel data at a last row of the segment.

8. (original): The computer-readable recording medium of claim 7, wherein each of the plurality of segments within the frame overlaps another of the plurality of segments by a predetermined number of pixels.

9. (original): A computer-readable recording medium for recording a computer program code for enabling a computer to provide a service of processing pixels, the service comprising the steps of:

storing pixel data at a first line of a k^{th} segment in line units;

pre-processing or post-processing the pixel data after storing the pixel data in a predetermined number of line units and outputting corresponding pre-processed or post-processed pixel data;

separately storing the pre-processed or post-processed pixel data and then, checking whether pre-processing/post-processing is performed on the pixel data at a last row of the k^{th} segment or not;

checking whether the k^{th} segment is a segment of a predetermined number after the pre-processing/post-processing on the pixel data at the last row; and

completing segment-based pixel processing when the k^{th} segment is the segment of the predetermined number, and repeating the pixel processing until reaching the segment of the predetermined number when the k^{th} segment is not the segment of the predetermined number.

10. (new): The method of claim 4, wherein the sequentially pre-processing or post-processing the pixel data in the segment further comprises checking whether the segment is the

segment of the predetermined number after the pre-processing/post-processing on pixel data at a last row of the segment.

11. (new): The method of claim 10 further comprising completing segment-based pixel processing when the segment is the segment of the predetermined number, and repeating the pixel processing until reaching the segment of the predetermined number when the segment is not the segment of the predetermined number.

12. (new): A pixel processing method comprising:

dividing pixel data within a frame into a plurality of segments in a vertical direction;

sequentially pre-processing or post-processing the pixel data in a segment among the plurality of segments in line units, comprising:

shifting n row pixel data of the segment stored in a first memory to a second memory;

shifting $n+1$ row pixel data of the segment stored the second memory to a third memory; and

storing $n+2$ row pixel data of the segment in the first memory;

sequentially pre-processing or post-processing the pixel data in a next segment in line units; and

repeating pre-processing or post-processing on the pixel data in other segments in line units until reaching a segment of a predetermined number.